(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties) A. GENERAL INFORMATION: 1. Spill incident Number: 838220 2. Type of incident * OIL SPILL 3. Name of Location OPUKUSHI WELL 24T FLOWLINE

66BEMO 4. Name of nearest community ANGALABIRI 5. State: BAYELSA 6. LGA EKEREMO 7. Type of Production facility/Installation <u>FLOWLINE</u>8, Asset owner/ District <u>NWS 2</u> B. INCIDENT INFORMATION: 9. Details of incident a. Date of incident: 03 7 2012 b. Start date/time of investigation: 1017/2012@1300 HRS c. Investigation End date: 10 17 2-012 d. Description of spill point environment ☐Firmed soil Loose soil ☐ Previously excavated area ☐Under water **⊠**Swampy ☐ Exposed pipe surface ☐ Well Plateform (on Water) \square Rig e. Description of leak point (tick as applicable); ☐Drilled hole □Hack saw cut Explosive tear, Complete Rupture ☐ Inward dent. Well head tampering ☐Failed Weld-on illegal hot tap valve, ☐ Missing Pipeline/Flowline) ☐ Crude oil theft (illegal) bunkering) point, ☐ Third party tampering with Clamp ☐ Third party tampering with valve setting, ☐Third party tampering with flange. Corresion. ☐Saver-pit over flow, ☐ Surge vessel overflow ☐Outward dent ☐ Flare System/Bund wall failure □Valve Failure Cold vent Com unit failure Relief valve failure ☐Others (specify)_ f. Incident caused by: ☐ Third party interference □_{Mystery}__ g. Spill point coordinates Measuring unit Northing: Easting: 371604m 101018m

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C.	RISK ASSESSME	NT			
	10. Type	of environment:			
	□ Land	⊠Swamp	□ Water	☐ Seasottal swamp	
	i. Type o	of environment to	which oil has sp	read:	
	□ Land	☐ Swamp	⊠ Water	□ River (identify)	
	ii. Weath	er condition			
	☐ Raining 11. Distance from t	Sunny the nearest sensit	ive habitat		
	☐ Government ☐ Drinking w ☐ Built up ar ☐ Farmlands ☐ Fish Farm/ ☐ Fishing up ☐ Others (specification)	vater source ca Pond t ceify).	lesignated protect	ed area [
			□ Dyk¢		
	Others:		?	[N] [Y]	
	14. Was there auy	disruption to the	investigation?	IYI IX	
	yes give brief descrip	_			
_	NOT	APPI	-1 CA	3LE:	
D	. TYPE/NUMBERS	OF PROPERT	IES, IF ANY, FO	OUND WITHIN THE AREA OF SPREAD OF OIL	
	15. Structures / F	roperties			
S	N Type of Struct	ures Desc	rintion Size	Number Comments	

S/N	Type of Structures	Description	Size	Number	Comi	ments	
				<u> </u>			
	TONE U	11/	M	ARES	top	MAC	7
				<u> </u>			

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16. Crops/Economic Trees

S/N Type of crops	Young	Medium	Matured	Quantity	Comments
NONE	WITH	MA	REA	OF IN	PACT

17. Fish/Nets/Ponds

S/N Fish/Nets/Ponds	Description	Quantity/Size	Comments
MONE WIT	HIN AREA	OF /M	PACT

18. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
l				
$\perp_{\Lambda} L$	anda 11/	TILL LADE	1-10-	
	7/40 W	FIMIL TIPE		MINACI
1			•	[-]

E. GRAPHIC DESCRIPTION OF LEAK POINT While detail report of the leak point should be contained in the Leak report, overview sketch of the site should be added as an appendix 1)

THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1310 838220

F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

19. Impacted area boundary Coordinates (If more than 12 points, Attach as an appendix 2)

S/N	Northing	Easting
1.	101007	371609
2-	101004	371609
3	101010	37/600
4	101020	371589
5	(0)022	371586
6	101016	371613
7	101016	371605
8	101027	371609
9	10/022	371621
10	101018	371622
- /1	101016	371605
SP	101018	37/604
حت		

G. INCIDENT INFORMATION:

20	Impacted	Area	Details
40.	muuucucu	11124	The figure

 Total calculated area of impact 	165.556	ML	
Impact within SPDC R.O.W	2-63 55	6 m²	
Impact outside R.O.W	NIL		
21. Volume of oil recovered before compl	ietion of JIV (VresJ):		
Recov	vered oil V _{res} j:	30	barrels

- 20. Computation of the residual volume on site
- - ii. Average Depth (m) of pool of free phase oil NOT AFFLICABLE

THE SHELL PE	TROLEUM DE	VELOPMENT C	OMPANY (
JOINT INVES	TIGATION REP	ORT FOR INCIDE	NT NO:	0310	<u></u> 238	220
iji. Emulsification t	factor: NOT	APPLICAB!	LE			
iv.	Volume of	pool of free phase oil.	V _{pend} :		NI	barrels
b. Computation of	of volume of infilt	rated oil in the soil (V _{inf}).			
i		vered by the oil:	MI	<u>l</u>		
ii	Area of the po	of of free phase oil i	n touch with	soil: N	<u> </u>	
ji	i – Average Depth	(m) below ground	surface of int	filtration of oil: \underline{f}	NOT P	PPLICABLE
is	v – Soil type: <u>N</u> i	OT APPLIC	THREE			
У	P _e (effective p	porosity of the soil).	MOT A	PPLICABL	·e	
i		of infiltrated oil. V			NI	L barrels
	f oil on open wate	on open water baser: 263 56	o Mª	ard coloration.		
	Thickness	Percentage	<u>-</u>			
	(mm)	coverage		Volume (m3	<u>*</u>	
Barely Visible Silvery	0.00004			$\overline{}$	-	
Slight Color	0.00015					
Bright Color	0.0003					
Dull	0.001	40	% 0	<u>00010 54</u>	224	
Dark	0.002		,			
Blackoil	0.1	30	0-1	00790668		
Emulsion (30% Oil)	1	30 %	o . Q∵	<u>0170668</u>		. — <u>e</u>
	Percent Total		100%	Total Volume	0.0	1 per P
III.	Volume of o	il on open water. V	fwnt:		0.5	5 harrels
22. Calculation of	•					
	урс: <u>ВОМИУ</u>					
ii. E-Fa	actor: 15°/	<u>o</u>				
iii.	Volume of e	vaporated oil: V svap:			55	59 berrole
Еуарога	tion Factors (E-Fac	tor) for SPDC Crude	oil			
Oil Type	Days on site	Bonny Light	Bonny Medium			
Period Since Oil Spill	< 1 day	10%	5%			
	+					

Evaporation Factors (E-Factor) for SPDC Crude oil					
Oil Type	Days on site	Bonny Light	Bonny Medium		
Period Since Oil Spill	< 1 day	10%	5%		
	1-7 days	25%	15%		
	>7 days	40%	25%		

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23 Gross Total Estimated Spilled Volume	
$\mathbf{V}_{\mathrm{cut}}(\mathrm{bbls}) = \mathbf{V}_{\mathrm{evap}}(\mathrm{bbls}) + \mathbf{V}_{\mathrm{wat}}(\mathrm{bbls}) + \mathbf{V}_{\mathrm{evt}}(\mathrm{bbls}) + \mathbf{V}_{\mathrm{part}}(\mathrm{bbls}) + \mathbf{V}_{\mathrm{evap}}(\mathrm{bbls})$	
Vie(bbis)- 35-94 BBLs	
24. Net Total Estimated Spilled Volume	
$V_{\text{per}}(\text{bbls}) = V_{\text{evap}}(\text{bbls}) + 0.6*V_{\text{set}}(\text{bbls}) + V_{\text{per}}(\text{bbls}) + V_{\text{per}}(\text{bbls}) + V_{\text{res}}(\text{bbls})$	
VEst(bbls)- 35.72BBLs	
	.1 211 1

25. GENERAL STATUS OF THE SITE

	Α.	Joint investigation of the incident site found that there is no residual impact after the initial response and therefore recommend that the site be closed out
ļ	В.	Investigation of the incident site showed that there is residual impact on site requiring further works
l		•

26 REPRESENTATIVES

- Host Community □
- Department of Petroleum Resources [DPR]:
- State Ministry of Environment |SME|: 🕮
- Nigeria Police Force [NPF]:
- Shell Petroleum Development Company [SPDC]:

Tick as applicable

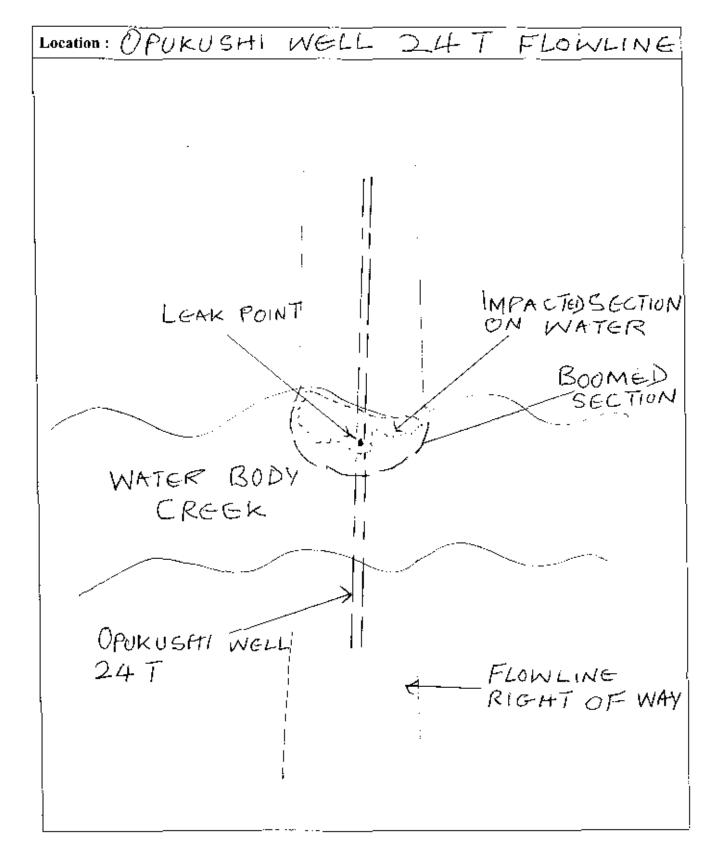
^{*}Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site

^{*}Conversion of m3 to barrels is Total volume VT (m3) x 6.29

^{*}Enaulsification factor for spill on water to consider is 60% of volume of oil.

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27. Appendix 1: Overview sketch of the site



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0310838220

21. Appendix 2:TABLE SHOWING ADDITIONAL COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

S/N	Northing	Easting
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		— † · · · · · · · · · · · · · · · · · ·
<u> </u>		
<u> </u>		
Z		